Wireless Annunciator with Strobe

SA-80A

Installation Manual



September 2008

ROSSLARE
SECURITY PRODUCTS

Table of Contents

1. Introduction 3

2. Mechanical Description 4

3. Electrical Description 6

3.1 Alarm Operation 6

3.2 Self-Check 7

3.3 Tamper Operation 7

3.4 Wireless Operation 7

4. Technical Specifications 9

5. Installation 11

5.1 Jumper Settings 11

5.2 Mechanical Installation 12

5.3 Testing 17

6. Maintenance 20

6.1 Scope of Maintenance 20

6.2 Wiring and Connections 20

6.3 PCB Description 20

6.4 Troubleshooting 23

Appendix A. Limited Warranty 25

Appendix B. Technical Support 27



Note

Upon receipt of your siren annunciator, verify that the siren unit includes an AC adapter and mounting hardware. If some item(s) is missing, report the discrepancy to your nearest Rosslare Enterprises Ltd. Sales office.



Warning!!!

BE SURE TO WEAR PROTECTIVE EAR PLUGS WHILE NEAR THE SIREN. VERY HIGH SOUND LEVEL MAY CAUSE EAR DAMAGE

1. Introduction

Rosslare's SA-80A wireless Siren Annunciator is used in commercial, industrial, and residential locations, either indoors or outdoors. The rugged packaging, styled to fit into any décor, can be mounted on a wall in any direction. The siren is capable of providing audible alerts for fire, alarm, and tampering, at levels difficult to ignore. A strong, flashing signal helps to identify the source of the alarm from a distance.

The SA-80A wireless Siren Annunciator includes an RF transceiver module that operates over one of two frequencies:

- SA-80AH - 868.35 MHz
- SA-80AG - 433.92 MHz

The SA-80A wireless unit operates with burglar (intrusion) alarm control panels and fire alarm control panels, such as the HomeLogiX, manufactured by Rosslare. It can also operate with Rosslare digital telephones, model SP-03. The frequency of the remote stations should match that of the siren.

In the wireless system, there is a constant communication process between the two end points, such that any attempt to remove the cover from the unit or tear the unit from the wall, is reported at once. Priorities for sounding off alarms are according to:

1) Fire
2) Alarm (panic)
3) Tamper

Alarms are activated/deactivated from the remote control panel or from any telephone.

2. Mechanical Description

The enclosure of the SA-80A is made of sturdy ABS material, capable of withstanding rain and dust. Sealing grommets on the mounting holes and around the base render the unit water-repellent. A transparent grill is used for sound transmission (from the speaker), and for visual indications.

The siren cover holds a strong loudspeaker (see Figure 1). The base holds three printed circuit assemblies and a back-up battery (see Figure 2). A fully charged battery powers the unit for over 24 hours, in the event of power failure or disable, and during that time the battery can power the alarm for at least five minutes.

The PCBs are snapped into place for easy replacement and secure mounting. A tamper plunger provides switch closure in two directions:

- Down - If the unit is torn off the wall, the plunger is released down.
- Up - If the cover is removed from the unit, the plunger rises.

The PCBs are:

- Main board
- Transceiver board
- Flash board



Warning!!!

High voltage is present on the terminals of the flash tube, when enabled.



Figure 1: Cover with Loudspeaker



Figure 2: Base with PCBs

3. Electrical Description

The siren unit (see Figure 3) is basically composed of a Main board which receives a number of external triggers, and generates audible and visual indications according to a pre-programmed microprocessor.

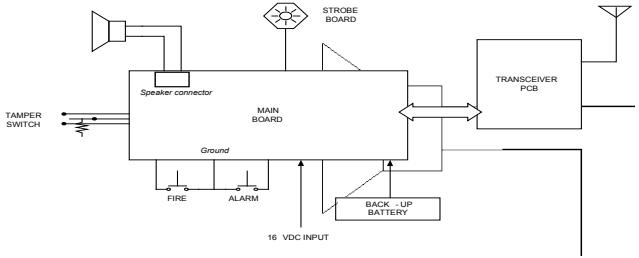


Figure 3: Siren Unit Block Diagram

3.1 Alarm Operation

The microprocessor is activated by fire or alarm inputs, and accordingly generates one of two sound patterns and related flashing strobe indications:

- Burglar (or panic) alarm sound – the strobe flashes until the input is restored to normal condition. The speaker in the siren outputs a loud 1300 to 1800 Hz continuous sweeping sound, having a 100% duty cycle. The alarm sounds until the timer runs out (5 or 15 minutes). The strobe continues to flash, even when the sound has ceased, until the unit is reset.
- Fire alarm sound – the operation is similar to that of the burglar alarm, with the exception of the audio sound from the speaker. The siren sounds off at 800 to 850 Hz,

continuously, for a period of 0.5 seconds, and then turns off for 0.5 seconds. This is repeated three times altogether, followed by a 1.5 second delay.

3.2 Self-Check

In addition to the alarms, the unit constantly checks itself. Every four hours, the status of the battery is checked. If the battery is low, the unit provides continuous visual indications: red LED indicator flashes at a rate of two seconds on and two seconds off; two short beeps are generated once per hour.

In the event that main power is removed due to a power failure or break-in, the normally-illuminated green LED indicator is extinguished.

3.3 Tamper Operation

The tamper switch is an input to the microprocessor and an output to the alarm control panel (host). When the switch is activated, the burglar alarm is generated for five minutes, regardless of further tamper switch settings. This alarm can be turned off only by activating the fire or burglar alarm, and then deactivating it.

The system is armed only 30 seconds after activating and deactivating the tamper switch function. This is useful for initial installation and maintenance functions.

3.4 Wireless Operation

As this siren unit is wireless, it has a transceiver PCB. This board receives/transmits the alarm/tamper/battery status from/to a remote phone or panel, equipped to interface with the siren at a distance of up to 200 meters. The board includes a microprocessor connected to an ASK FM transceiver. An onboard antenna enables communication to a remote location.

Alarm enabling/disabling is transmitted from the remote panel or phone, while the tamper/battery status is sent from the siren unit to the host. Acknowledgements make for reliable communication.

4. Technical Specifications

Power Characteristics

Input Voltage:	14-18VDC. From host panel or wall adapter.
Battery Charging Current:	300 mA max No alarm
Input Current:	0.6 A; during alarm Standby: < 100mA; no alarm

Battery Characteristics

Battery Capacity:	2.3 Ahr; 12 V sealed lead-acid battery
Battery Lifetime:	5 years; typical
Battery Backup:	24 hr min.; in standby mode

Electrical Characteristics

Frequency H model	868.35 MHz; ± 0.1 MHz
Frequency G model	433.92 MHz; ± 0.1 MHz
Effective Transmit Power	10 mW nominal
Transmit Range	>180 m

Receiver Sensitivity	-100 dBm min.; For 100 kHz bandwidth

Siren Output

Speaker Low Level	90 dB; at 1 m
Speaker High Level	103 dB; at 1 m

Environmental Characteristics

Operating Environment:	Outdoor Use (IP55)
Operating Temperature:	-20°C to +50°C
Operating Humidity:	0% - 95% (Non Condensing)

Dimensions

Height x Width x Depth	25 x 25 x 9 cm
Weight	2236.5 g

5. Installation

This section provides details and procedures on the physical and electrical installation of the siren unit. The unit is first physically installed, and then a number of steps are followed to enable and arm the device.

5.1 Jumper Settings

It is recommended to set the jumpers before installing the unit, as it is much easier than doing so after installation.

1) Disassemble the cover from the base by extracting the three screws from the cover. Set the screws aside.
2) Locate the Main board and identify the jumpers to be set, according to Figure 4 and Table 1.

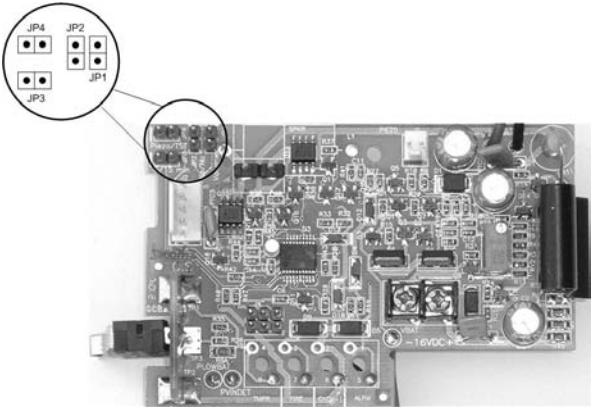


Figure 4: Setting Jumpers on Main Board

Table 1: Main Board Jumper Settings

Jumper	Function	Fitted	Not Fitted	Remarks
JP1	Volume selection	Low	High	(1)
JP2	Input topology	N.C.	N.O.	Alarm input
JP3	Alarm timer	15 min.	5 min.	
JP4	Not used			For factory programming only



Note:
Volume settings are according to section 4 Technical Specifications.

5.2 Mechanical Installation

5.2.1. Preferred Location

Mount the siren unit on a straight surface, away from heat or exhaust of gases, and preferably in a shady place. The unit is protected from rain and dust by a gasket surrounding the base of the unit to seal the cover, and by gaskets that surround each entry hole in the base (see Figure 5). The unit may be installed in any one of four directions, as desired by the installer. However, for the SA-80 G range models, it is recommended to install the unit in an upright or downright position (as portrayed in Figure 1 and Figure 6) for optimal RF reception.



Figure 5: Base with Sealing Gaskets

5.2.2. Initial Preparation

1) Disassemble the cover from the base by extracting the three screws from the cover. Set the screws aside.
2) Use the dimensions from Figure 6 to locate the three holes to be drilled in the wall. As an alternative, the base can be positioned, and the holes marked.
3) Use appropriate hardware to affix the base to the surface.
4) Make sure that the straight side of the base is level.

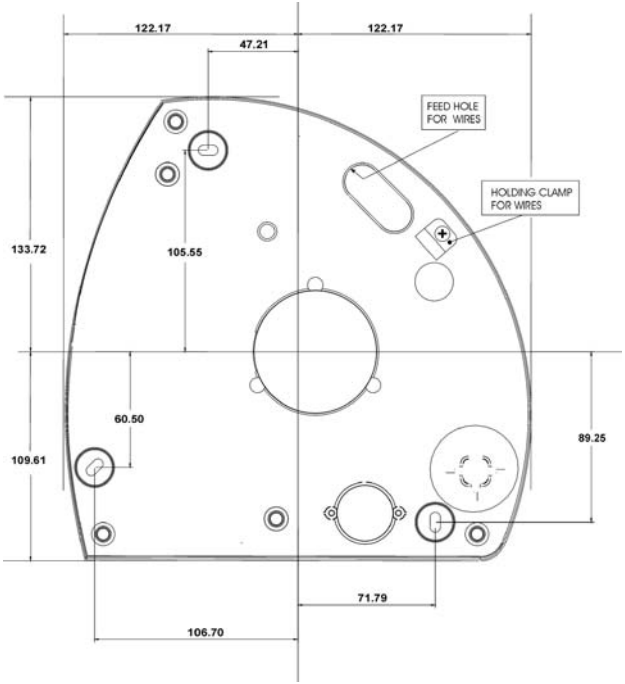


Figure 6: Base Plate Layout

5.2.3. General Wiring Instructions

Before beginning, read the entire process!

1) Remove the Transceiver board from the base, to access the feed hole for the wires.

2) Locate the feed hole and grommet for the wires to be connected inside the unit (see Figure 6); two 22 AWG cabling wires are needed for the 16 VDC power.
3) Use a simple wire loop to pull the cabling through the hole into the base area. Leave enough slack to make connections to the Main board.
4) Run the cabling via the rubber grommet, and replace the grommet in the base.
5) Secure the cabling by using the holding clamp (see Figure 6).
6) Strip the cable and wires and connect the power conductors to the power input terminals J1 (-16VDC+) (see
7) Figure 7). Observe polarity!
8) Once all wiring has been done, locate and connect the red battery wire to the battery positive lug and the black wire to the negative lug. Do not apply external power at this time.



Note:
The siren is not powered after the battery is connected. The unit starts operating only after external power from a wall adapter or from the host panel is applied.

9) Check the operation of the tamper switch, as indicated hereafter.

5.2.4. Tamper Switch Setting

You can adjust the plunger to compensate for an uneven mounting surface. You can perform the adjustment using the screw within the plunger (see Figure 8). Releasing the plunger activates the micro-switch (alarm condition), until the cover is replaced.

Reconnect the speaker connector to J5 on the Main board (see Figure 7), prior to closing the cover.

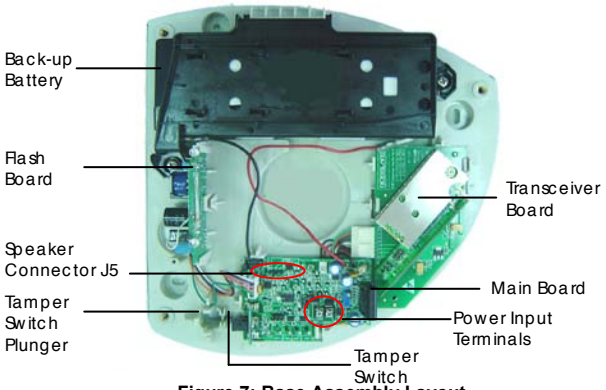


Figure 7: Base Assembly Layout

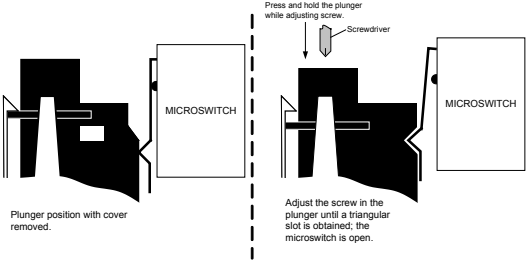


Figure 8: Tamper Switch Plunger Adjustment

5.3 Testing

It is necessary to check the general operation of the siren, and to test it after installation and prior to putting it into service.

5.3.1. General Operation

Make sure that power is applied to the siren. Observe that the green light on the Strobe board is illuminated.

Before beginning, read the entire process!

5.3.2. Testing

The following steps are performed with a telephone unit, type SP-03, and its remote control; the phone's frequency is to match that of the siren.

Perform the steps listed in the table below.

Table 2: Testing Wireless Siren

Step	Operation	Audio Indication	Visual Indication
1	Connect power to the telephone; do not connect a phone line.	The phone emits two short beeps.	SP03 V1.2 WAIT
2	Enter 8 8 8 8 on the phone.	A beep is emitted after each digit is entered;	* * * * followed by, PROGRAMMING SELECT FUNCTION
3	Press the ✱ key.	The phone emits two short beeps.	WIRELESS SIRENS NOT INSTALLED

4	Press Store key.		SIREN TIME: 03
5	Press Store key.		WIRELESS SIRENS followed by prompt: (Value 1....4 for up to four sirens on a system).
6	Enter 1 on the phone.		WIRELESS SIREN_1 followed by prompt: ENROLL TRANSMIT.
7	Remove the three screws from the cover and lift the cover.		WIRELESS SIREN_1 INSTALLED For one second only.
8	Press Escape key 4 times.	-	Returns to DISARMED screen.
9	Press the Panic button on the remote control for 3 to 6 seconds.	Wireless siren is activated; internal alarm in phone is activated.	Strobe on wireless siren is activated.
10	Press the OFF pushbutton on the	The phone gives 2 short	Returns to DISARMED

	remote control.	beeps. Wireless siren is deactivated ; internal alarm in phone is deactivated .	screen. Strobe on wireless siren is deactivated.

5.3.3. Testing the Tamper Feature

1) Raise the cover of the siren in order to test the tamper feature. The alarm sounds off immediately (no strobe). Have the second person turn off the alarm at the host panel.
2) Replace the cover on the base and secure with the three screws previously removed (see section 5.2.2).

6. Maintenance

6.1 Scope of Maintenance

Maintenance of the siren is limited to replacement of major subassemblies, such as PCBs and battery. It is necessary to remove the siren from its installed location when performing maintenance. Make sure to disarm the unit prior to removal.

6.2 Wiring and Connections

The PCBs are interfaced by wiring and connectors. For a complete assembly, see Figure 9.

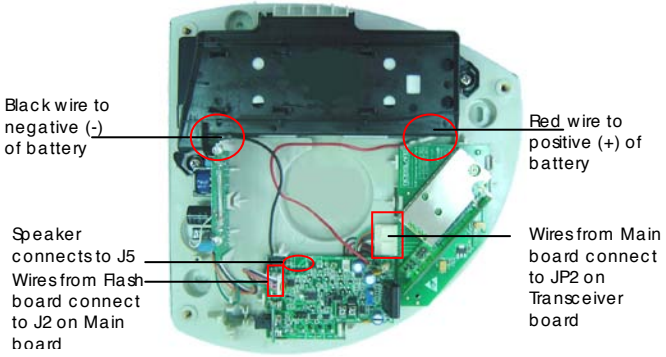


Figure 9: Wire Connections

6.3 PCB Description

This paragraph describes connectors, switches, indicators, and jumpers used in the siren unit, categorized by individual boards.

6.3.1. Main Board

The Main board includes the major components for the operation of the siren: a microprocessor, a loudspeaker, driving circuitry, and a power supply regulator. A number of jumpers are available to select certain parameters (refer to the table below).

Table 3: Main Board Components

Ref. Des.	Description	Function	Remarks
J1	Terminal board	Input power	Pin 1: (+) Pin 2: (-)
J2	Multi-pin header	Strobe output	Pin 1: Strobe + Pin 2: Strobe - Pin 3: Power LED Pin 4: Battery low out Pin 5: Ground
J4	Multi-pin header	Programming	Factory use only
J5	2-pin header	Speaker output	
J6	2-pin header	Piezzo output	
R16	Potentiometer	Float charge set	Factory adjust only
JP1	Jumper	Volume	High or low

JP2	Jumper	Alarm inputs	N.C. or N.O.
JP3	Jumper	Auto shut-down	5 or 15 minutes
JP4	Jumper	Output selection	Factory use only
SW1	Microswitch	Tamper	
P1	Plug and wires	Connection sto Transceiver board	Pin 1: VBAT Pin 2: Ground Pin 3: - Pin 4: TMPR Pin 5: PLOWBAT Pin 6: ALARM Pin 7: FIRE Pin 8: PVINDET

6.3.2. Transceiver Board

The Transceiver board includes a transmit/receive chip, a microprocessor, and a power supply regulator. The only connector on the board is JP2, used for interconnection to the Main board. Pin definition matches are given in Table 3, for connector P1.

Header JP1 is for programming the board, at the factory.

6.3.3. Strobe Board

The Strobe board includes a high voltage supply to flash the strobe bulb during alarms. This board includes two LED indicators which are visible through the orange plastic, when illuminated.

The indicators are:

- LD1 – A power LED which illuminates when power is applied.
- D2 – A lo-battery LED which illuminates when battery voltage is low. This indicator has a cycle of two-seconds on, and then two-seconds off. It is triggered when the battery test fails.

A connector plugs into the Main board, at J2; refer to Table 3 for corresponding pin descriptions.

6.4 Troubleshooting

Troubleshooting of the unit is straightforward. It is assumed that the unit was installed according to instructions, and was operating properly. Troubleshooting is done with the unit mounted on the wall.

6.4.1. General Guidelines

Follow these general guidelines:

- If a problem is reported, verify the operation of the siren unit by triggering the burglar alarm. Both the speaker and strobe must operate.
- If only the strobe does not work, the Strobe PCB is faulty.
- If both the Strobe PCB and the Main board do not function, the problem may be due to the Transceiver PCB or due to the Main board.
- In all cases, check for a speaker impedance of four ohms.

6.4.2. Specific Guidelines

Perform the following steps:

1) Switch off power to the siren unit and remove the cover; the speaker is supposed to sound off.
2) Quickly unplug the speaker connector from the Main board.
3) Disconnect the positive terminal lug from the battery.
4) Disconnect the connector to the Transceiver board.
5) Reconnect the battery. Reapply external power.
6) Short the contacts on the Main board, labeled J3, using a jumper wire: Alarm (ALRM) short 1 & 2 (see Figure 10). If the strobe flashes, the Transceiver board is defective.
7) Once again, switch off power to the siren unit.
8) Disconnect the positive terminal lug from the battery.
9) Replace the board and reconnect the speaker connector. Reconnect the battery. Reapply the external power. Replace and secure the cover.
10) Once a board has been replaced, check again to ensure proper functionality.

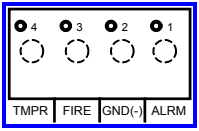


Figure 10: Wireless Version Contact

Appendix A. Limited Warranty

ROSSLARE ENTERPRISES LIMITED S (Rosslare) TWO YEARS LIMITED WARRANTY is applicable worldwide. This warranty supersedes any other warranty. Rosslare's TWO YEARS LIMITED WARRANTY is subject to the following conditions:

Warranty

Warranty of Rosslare's products extends to the original purchaser (Customer) of the Rosslare product and is not transferable.

Products Covered By This Warranty and Duration

ROSSLARE ENTERPRISES LTD. AND / ORSUBSIDIARIES (ROSSLARE) warrants that the SA-80A Wireless Annunciator Siren, to be free from defects in materials and assembly in the course of normal use and service. The warranty period commences with the date of shipment to the original purchaser and extends for a period of 2 years (24 Months).

Warranty Remedy Coverage

In the event of a breach of warranty, ROSSLARE will credit Customer with the price of the Product paid by Customer, provided that the warranty claim is delivered to ROSSLARE by the Customer during the warranty period in accordance with the terms of this warranty. Unless otherwise requested by ROSSLARE ENTERPRISES LTD. AND / OR SUBSIDIARIES representative, return of the failed product(s) is not immediately required. If ROSSLARE has not contacted the Customer within a sixty (60) day holding period following the delivery of the warranty claim, Customer will not be required to return the failed product(s). All returned Product(s), as may be requested at ROSSLARE ENTERPRISES LTD. AND /OR SUBSIDIARY'S sole discretion, shall become the property of ROSSLARE ENTERPRISES LTD. AND /OR SUBSIDIARIES.
To exercise the warranty, the user must contact Rosslare Enterprises Ltd. to obtain an RMA number after which, the product must be returned to the Manufacturer freight prepaid and insured
In the event ROSSLARE chooses to perform a product evaluation within the sixty (60) day holding period and no defect is found, a minimum US$ 50.00 or equivalent charge will be applied to each Product for labor required in the evaluation.
Rosslare will repair or replace, at its discretion, any product that under normal conditions of use and service proves to be defective in material or workmanship. No charge will be applied for labor or parts with respect to defects covered by this warranty, provided that the work is done by Rosslare or a Rosslare authorized service center.

Exclusions and Limitations

ROSSLARE shall not be responsible or liable for any damage or loss resulting from the operation or performance of any Product or any systems in which a Product is incorporated. This warranty shall not extend to any ancillary equipment not furnished by ROSSLARE, which is attached to or used in conjunction with a Product, nor to any Product that is used with any ancillary equipment, which is not furnished by ROSSLARE.
This warranty does not cover expenses incurred in the transportation, freight cost to the repair center, removal or reinstallation of the product, whether or not proven defective. Specifically excluded from this warranty are any failures resulting from Customer's improper testing, operation, installation, or damage resulting from use of the Product in other than its normal and customary manner, or any maintenance, modification, alteration, or adjustment or any type of abuse, neglect, accident, misuse, improper operation, normal wear, defects or damage due to lightning or other electrical discharge. This warranty does not cover repair or replacement where normal use has exhausted the life of a part or instrument, or any modification or abuse of, or tampering with, the Product if Product disassembled or repaired in such a manner as to adversely affect performance or prevent adequate inspection and testing to verify any warranty claim.
ROSSLARE does not warrant the installation, maintenance, or service of the Product. Service life of the product is dependent upon the care it receives and the conditions under which it has to operate.
In no event shall Rosslare be liable for incidental or consequential damages.

Limited Warranty Terms

THIS WARRANTY SETS FORTH THE FULL EXTENT OF ROSSLARE ENTERPRISES LTD. AND ITS SUBSIDIARIES' WARRANTY

THE TERMS OF THIS WARRANTY MAY NOT BE VARIED BY ANY PERSON, WHETHER OR NOT PURPORTING TO REPRESENT OR ACT ON BEHALF OF ROSSLARE.

THIS LIMITED WARRANTY IS PROVIDED IN LIEU OF ALL OTHER WARRANTIES. ALL OTHER WARRANTIES EXPRESSED OR IMPLIED, INCLUDING WITHOUT LIMITATION, IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE SPECIFICALLY EXCLUDED.

IN NO EVENT SHALL ROSSLARE BE LIABLE FOR DAMAGES IN EXCESS OF THE PURCHASE PRICE OF THE PRODUCT, OR FOR ANY OTHER INCIDENTAL, CONSEQUENTIAL OR SPECIAL DAMAGES, INCLUDING BUT NOT LIMITED TO LOSS OF USE, LOSS OF TIME, COMMERCIAL LOSS, INCONVENIENCE, AND LOSS OF PROFITS, ARISING OUT OF THE INSTALLATION, USE, OR INABILITY TO USE SUCH PRODUCT, TO THE FULLEST EXTENT THAT ANY SUCH LOSS OR DAMAGE MAY BE DISCLAIMED BY LAW.

THIS WARRANTY SHALL BECOME NULL AND VOID IN THE EVENT OF A VIOLATION OF THE PROVISIONS OF THIS LIMITED WARRANTY.

Appendix B. Technical Support

Asia Pacific, Middle East

Rosslare Security Products Headquarters
905-912 Wing Fat Industrial Bldg,
12 Wang Tai Road,
Kowloon Bay Hong Kong
Tel: +852 2795-5630
Fax: +852 2795-1508
E-mail: support.apac@rosslaresecurity.com

United States and Canada

1600 Hart Court, Suite 103
Southlake, TX, USA 76092
Tool Free:+1-866-632-1101
Local:+1-817-305-0006
Fax: +1-817-305-0069
E-mail: support.na@rosslaresecurity.com

Europe, Africa

Global Technical Support & Training Center
HaMelecha 22
Rosh HaAyin, Israel 48091
Tel: +972 3 938-6838
Fax: +972 3 938-6830
E-mail: support.eu@rosslaresecurity.com

South America

Pringles 868, 1640 Martinez
Buenos Aires
Argentina
Tel: +54 11 4798-0095
Fax: +54 11 4798-2228

Web Site: www.rosslaresecurity.com

ROSSLARE
SECURITY PRODUCTS

www.rosslaresecurity.com

CE

TÜV CERT
DIN EN 9001:2000
ISO 14001:2004

RoHS COMPLIANT

0706-0960236+01